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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,926	05/30/2007	Gottfried Durr	1006/0137PUS1	8251

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Muncy, Geissler, Olds & Lowe, PLLC
4000 Legato Road
Suite 310
FAIRFAX, VA 22033

EXAMINER	
LEO, LEONARD R	
ART UNIT	PAPER NUMBER
3744	
MAIL DATE	DELIVERY MODE
07/26/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,926	DURR ET AL.	
	Examiner	Art Unit	
	Leonard R. Leo	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 July 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6,8-17,19 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,8-17,19 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 7, 2010 has been entered.

Claims 2 and 18 are cancelled, and claims 1, 3-6, 8-17 and 19-20 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-6, 9, 11-12, 17 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seewald in view of Cribari.

Seewald (Figures 2-3) discloses a heat exchanger comprising a tank 14 made of bent sheet metal lid 15 defining two semicircular chambers, and a base 1 including a flat cover 2; but does not disclose a number of stops on the tank.

Cribari discloses a heat exchanger comprising a tank 4 having a tunnel shaped part 18, a base 16, and a cover 6, wherein the tunnel shaped part 18 has a number of stops 24 for the purpose of positively positioning the cover.

Since Seewald and Cribari are both from the same field of endeavor and/or analogous art, the purpose disclosed by Cribari would have been recognized in the pertinent art of Seewald.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Seewald a number of stops on the tank for the purpose of positively positioning the cover as recognized by Cribari.

Regarding claims 3 and 19, Figure 6 of Cribari discloses bent brackets/tabs 40 on tunnel shaped part 18.

Regarding claims 5-6, Figure 2 of Seewald discloses inlet and outlet openings 5, 6 with outward bent edges to form passages 12, 13.

Regarding claim 9, Figure 4 of Seewald discloses pipe 17 disposed inside the bent edge of passage 13 of outlet opening 6.

Regarding claim 12, Figures 1a-c of Seewald discloses slot 7 receiving separating walls to provide four fluid passes.

Regarding claim 17, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). Employing the device of Seewald in a vehicle air conditioning system does not change the structure of the device.

Regarding claim 20, as applied to claims 5-6 above, Figure 2 of Seewald discloses inlet and outlet openings 5, 6 with outward bent edges (i.e. hollow cylinder) to form passages 12, 13 whose centerline is perpendicular to the plane of the cover 2.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seewald in view of Cribari as applied to claims 1, 3-6, 9, 11-12, 17 and 19-20 above, and further in view of Chiba et al.

The combined teachings of Seewald and Cribari lacks a pipe attached on the outside of the opening.

Chiba et al (Figures 5 and 6) discloses a heat exchanger comprising a tank 32, 42 having an opening with a bent edge 35, 45 and a pipe 34, 44 fitted on the outside thereof for the purpose of positioning the pipe during assembly.

Since Seewald and Chiba et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Chiba et al would have been recognized in the pertinent art of Seewald.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Seewald and a pipe fitted on the outside of the bent edge for the purpose of positioning the pipe during assembly as recognized by Chiba et al. As disclosed in Figure 3 of Chiba et al, pipe 4 is fitted inside the bent edge 8. Hence, Chiba et al discloses two alternate pipe joint connections, which are obvious variants of one another. Furthermore, it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seewald in view of Cribari as applied to claims 1, 3-6, 9, 11-12, 17 and 19-20 above, and further in view of Gowan.

The combined teachings of Seewald and Cribari lacks the tank having a tapered edge.

Gowan (Figure 10) discloses a heat exchanger comprising a tank 12 having a cover 40 with a taper fitted therein for the purpose of facilitating insertion during assembly.

Since Seewald and Gowan are both from the same field of endeavor and/or analogous art, the purpose disclosed by Gowan would have been recognized in the pertinent art of Seewald.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Seewald a cover with a taper for the purpose of facilitating insertion during assembly as recognized by Gowan. As noted above, it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167. Therefore, to employ a taper on the tank edge instead of the cover as taught by Gowan would have been obvious to one of ordinary skill in the art.

Claims 13-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seewald in view of Cribari as applied to claims 1, 3-6, 9, 11-12, 17 and 19-20 above, and further in view of Yamamoto et al (5,311,935).

The combined teachings of Seewald and Cribari lacks the specific dimensions of the fin.

Yamamoto et al ('935) discloses a heat exchanger comprising a plurality of flat tubes 23 and corrugated fins 24, wherein the fins have a rib height of 3.0 to 6.0 mm (Figure 10) and a rib pitch of 1.5 mm (Figure 11, i.e. about 67 ribs per 100 mm) for the purpose of achieving optimal heat transfer.

Since Seewald and Yamamoto et al ('935)are both from the same field of endeavor and/or analogous art, the purpose disclosed by Yamamoto et al ('935)would have been recognized in the pertinent art of Seewald.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Seewald fins having a rib height of 3.0 to 6.0 mm and a rib pitch of 1.5 mm for the purpose of achieving optimal heat transfer as recognized by Yamamoto et al ('935).

Regarding claim 14, Yamamoto et al ('935) (Figure 11) discloses the rib pitch is 3.0 mm. As disclosed in Figure 1 of Yamamoto et al, the rib pitch, Pf and rib height, Hf define the base and height of a triangle, wherein opening angle equals the inverse tangent of half of Pf divided by Hf. As calculated, the opening angle, $\alpha = 26.6°$ (where Pf = 3.0 mm and Hf = 3.0 mm) meets the claimed range.

Regarding claim 16, Figure 14 of Yamamoto et al ('935) discloses the tube "width" ranges from about 1.2 to 2.0 mm.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seewald in view of Cribari as applied to claims 1, 3-6, 9, 11-12, 17 and 19-20 above, and further in view of Yamamoto et al (5,271,458).

The combined teachings of Seewald and Cribari lacks the specific radius of curvature of the fin.

Yamamoto et al ('458) discloses a heat exchanger comprising a plurality of flat tubes 102 and corrugated fins 101 having a radius of curvature between 0.14 to .037 mm for the purpose of achieving optimal heat transfer (abstract).

Since Seewald and Yamamoto et al ('458) are both from the same field of endeavor and/or analogous art, the purpose disclosed by Yamamoto et al ('458) would have been recognized in the pertinent art of Seewald.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Seewald a fin having a radius of curvature between 0.14 to .037 mm for the purpose of achieving optimal heat transfer as recognized by Yamamoto et al ('458).

Response to Arguments

The rejection of claims 1-6 and 8-20 under 35 U.S.C. 112, second paragraph, is withdrawn in view of the claim amendments.

Applicants' arguments have been fully considered but they are not persuasive.

Regarding applicants' remarks with respect to the rejection of claim 2, as applied to amended claim 1, applicants acknowledge the primary reference of Seewald discloses a flat cover 2 integral to the base 1, which is bent into position. However, there is no structure to facilitate when the flat cover is in a proper position. The secondary reference of Cribari discloses a heat exchanger comprising a tank 4 having a tunnel shaped part 18, a base 16, and a cover 6, wherein the tunnel shaped part 18 has a number of stops 24 for the purpose of positively positioning the cover. While the flat cover 2 of Seewald may be capable of be maintained in a position after being bent depending on material thickness or ductility, the modification of stops 24 as taught by Cribari would ensure the flat cover is not overly bent (or bent enough) into the tank of Seewald. The stop 24 of Cribari would provide, as its name implies, a positive stop of the flat cover in the device of Seewald.

Regarding applicants' remarks with respect to the rejection of claim 19, the secondary reference of Cribari (Figure 6) teaches bent brackets/tabs 40 on tunnel shaped part 18 to ensure the cover 6 is maintained during final manufacture. As well known in the art, the brazing of heat exchanger components undergo stresses from thermal expansion and contraction. Brazing jigs, as well as structures integral to the heat exchanger components are typically employed to ensure the components are maintained in position during brazing. In this instance, the stops 24 and bent

brackets 40 of Cribari are the integral structures maintaining the cover 6 in position during brazing, which one of ordinary skill in the art would readily recognize and appreciate.

The rejections in view of the secondary references of Chiba et al, Gowan, Yamamoto et al ('935) and Yamamoto et al ('458) are deemed proper, since applicants do not traverse their respective teachings.

Conclusion

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ Leonard R. Leo /
PRIMARY EXAMINER
ART UNIT 3744

July 26, 2010